

Rec'd PCT/PT 19 OCT 2004

11, 835

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
30 October 2003 (30.10.2003)

PCT

(10) International Publication Number
WO 03/090333 A2

- (51) International Patent Classification⁷: **H02M**
- (21) International Application Number: **PCT/US03/11564**
- (22) International Filing Date: **16 April 2003 (16.04.2003)**
- (25) Filing Language: **English**
- (26) Publication Language: **English**
- (30) Priority Data:
60/374,281 **19 April 2002 (19.04.2002)** **US**
- (71) Applicant (for all designated States except US): **THOMSON LICENSING S.A. [FR/FR]**; 46, Quai A. Le Gallo, F-92648 Boulogne (FR).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **CHOKSI, Snehal [IN/US]**; 7539 Mill Run Road, Fort Wayne, IN 46819 (US). **GRIES, Robert, Joseph [US/US]**; 6143 Irwin Court, Indianapolis, IN 46237 (US). **WILLIAMS, Kevin, Michael [US/US]**; 6101 N. Primrose Avenue, Indianapolis, IN 46220 (US). **JACKSON, David, Ross [US/US]**; 4422 Abby Creek Lane, Indianapolis, IN 46205 (US). **WATSON, Robert, Goah, III [US/US]**; 18561 Wychwood Place, Noblesville, IN 46060 (US).

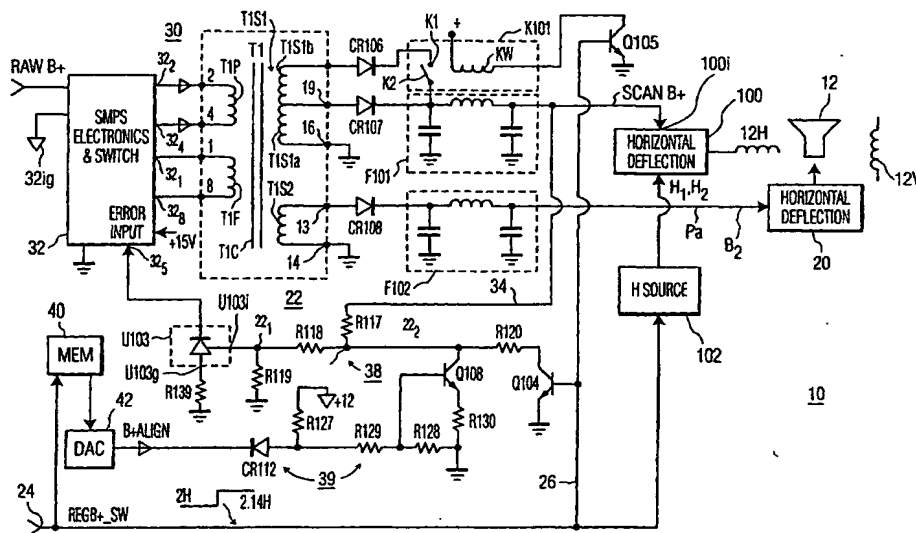
- (74) Agents: **TRIPOLI, Joseph, S. et al.**; c/o Thomson Licensing Inc., 2 Independence Way - Suite 2, Princeton, NJ 08540 (US).
- (81) Designated States (national): **AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.**
- (84) Designated States (regional): **ARIPO** patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), **Eurasian** patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), **European** patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), **OAPI** patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **DEFLECTION SUPPLY VOLTAGE FEEDBACK CONTROL IN CONJUNCTION WITH FREQUENCY CHANGE**



(57) Abstract: A video display includes a scanner operable at a first frequency and a higher second frequency. A switchmode power supply (SMPS) drives a transformer with three secondaries. First and second rectifiers & filters are associated with the first and second secondaries. A rectifier is coupled to the third secondary and by way of a switch to the first filter. Feedback from the first filter controls the SMPS. In a first operating mode, the scanner is operated at the first frequency, the switch is open, the scanner supply is a first voltage from the first filter, and ancillary equipment is supplied with a third voltage by the second filter. In a second operating mode, the scanner is operated at the second frequency, the switch is closed, the scanner supply is a second voltage, higher than the first, from the first filter, and ancillary equipment is supplied with the same third voltage.

WO 03/090333 A2

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
30 October 2003 (30.10.2003)

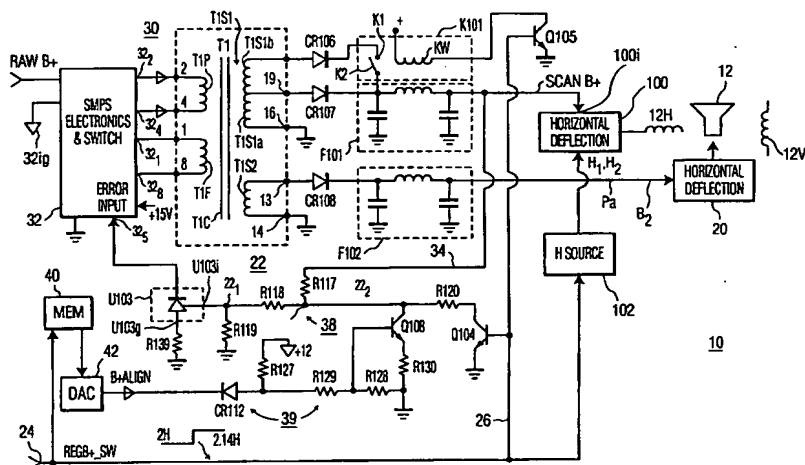
PCT

(10) International Publication Number
WO 03/090333 A3

- (51) International Patent Classification⁷: **H02M 3/335, G09G 1/04, H01J 29/70**
- (21) International Application Number: **PCT/US03/11564**
- (22) International Filing Date: **16 April 2003 (16.04.2003)**
- (25) Filing Language: **English**
- (26) Publication Language: **English**
- (30) Priority Data:
60/374,281 19 April 2002 (19.04.2002) US
- (71) Applicant (for all designated States except US): **THOMSON LICENSING S.A. [FR/FR]; 46, Quai A. Le Gallo, F-92648 Boulogne (FR).**
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **CHOKSI, Snehal [IN/US]; 7539 Mill Run Road, Fort Wayne, IN 46819 (US). GRIES, Robert, Joseph [US/US]; 6143 Irwin Court, Indianapolis, IN 46237 (US). WILLIAMS, Kevin, Michael [US/US]; 6101 N. Primrose Avenue, Indianapolis, IN 46220 (US). JACKSON, David, Ross [US/US]; 4422 Abby Creek Lane, Indianapolis, IN 46205 (US). WATSON, Robert, Goah, III [US/US]; 18561 Wychwood Place, Noblesville, IN 46060 (US).**
- (74) Agents: **TRIPOLI, Joseph, S. et al.; c/o Thomson Licensing Inc., 2 Independence Way - Suite 2, Princeton, NJ 08540 (US).**
- (81) Designated States (national): **AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.**
- (84) Designated States (regional): **ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).**
- Published:**
- with international search report
 - before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: DEFLECTION SUPPLY VOLTAGE FEEDBACK CONTROL IN CONJUNCTION WITH FREQUENCY CHANGE





(88) Date of publication of the international search report:
4 December 2003

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/11564

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H02M 3/335; G09G 1/04; H01J 29/70
US CL : 315/411, 395, 408, 369; 363/21, 19, 21, 23

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 315/411, 395, 408, 369; 363/21, 19, 21, 23

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
NONE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4,658,342 A (WHARTON) 14 April 1987 (14.04.1987), see entire document.	1-20
Y	US 4,692,852 A (HOOVER) 08 September 1987 (08.09.1987), see entire document.	1-20
Y	US 6,114,817 A (FERNSLER) 05 September 2000 (05.09.2000), see entire document.	1-20

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

28 September 2003 (28.09.2003)

Date of mailing of the international search report

09 OCT 2003

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703)305-3230

Authorized officer

Jimmy Vu

Telephone No. 703-306-5451